

What is claimed is:

1. An optical switch comprising:

a substrate;

a first input fiber and a first output fiber that are arranged at a first predetermined distance from a central point in a first optical path passing through the central point over the substrate;

a second input fiber and a second output fiber that are arranged at a second predetermined distance from the central point in a second optical path that passes through the central point;

a rotating mirror that is positioned at around the central point and turns on a turning shaft extending in a direction substantially parallel with the substrate;

bars that support the rotating mirror so that the rotating mirror rotates;
and

an electrostatic force generating part that supplies a drive force to the rotating mirror.

2. The optical switch of claim 1, wherein trenches into which the first and second input fibers and the first and second output fibers are inserted are formed in the substrate along the first and second optical paths.

3. The optical switch of claim 1, wherein the rotating mirror has a first position where the rotating mirror is substantially parallel with the

substrate and a second position where the rotating mirror is substantially perpendicular to the substrate, and turns from the first position to the second position by the electrostatic force generating part.

4. The optical switch of claim 2, wherein the rotating mirror has a first position where the rotating mirror is substantially parallel with the substrate and a second position where the rotating mirror is substantially perpendicular to the substrate, and turns from the first position to the second position by the electrostatic force generating part.

5. The optical switch of claim 2, wherein a spring, which serves to prevent the first and second input fibers and the first and second output fibers from separating from the trenches, is formed over the trenches.

6. The optical switch of claim 5, wherein the spring is formed of a material the rotating mirror is formed of.

7. The optical switch of claim 1, wherein an anti-electrostatic electrode, which serves to prevent an electrostatic force from being generated between the rotating mirror and the substrate, is formed at around a sidewall of the electrostatic force generating part contacting the rotating mirror and under the rotating mirror.

8. The optical switch of claim 2, wherein an anti-electrostatic electrode, which serves to prevent an electrostatic force from being generated

between the rotating mirror and the substrate, is formed at around a sidewall of the electrostatic force generating part contacting the rotating mirror and under the rotating mirror.

9. The optical switch of claim 3, wherein an anti-electrostatic electrode, which serves to prevent an electrostatic force from being generated between the rotating mirror and the substrate, is formed at around a sidewall of the electrostatic force generating part contacting the rotating mirror and under the rotating mirror.

10. The optical switch of claim 4, wherein an anti-electrostatic electrode, which serves to prevent an electrostatic force from being generated between the rotating mirror and the substrate, is formed at around a sidewall of the electrostatic force generating part contacting the rotating mirror and under the rotating mirror.

11. The optical switch of claim 1, wherein the first optical path is substantially orthogonal to the second optical path.

12. The optical switch of claim 1, wherein the bars are torsion bars.

13. The optical switch of claim 3, wherein a first incident light beam from the first input fiber is deflected to the second output fiber and a second incident light beam from the second input fiber is deflected to the first output fiber when the rotating mirror is at the second position.

14. An optical switch comprising:
a substrate;

a first light input path and a first light output path that are substantially coaxially disposed at a predetermined distance apart in a first optical path;

a second light input path and a second light output path that are substantially coaxially disposed at a predetermined distance apart in a second optical path, wherein the first optical path and the second optical path intersect at about a central point;

means for changing the first optical path of a first incident light beam from the first light input path and the second optical path of a second incident light beam from the second light input path, wherein the means for changing the first and second optical paths is rotatively supported at about the central point on the substrate; and

an electrostatic force generating part that supplies a drive force to the means for changing the first and second optical paths.

15. The optical switch of claim 14, wherein the means for changing the first and second optical paths deflects the first incident light beam to the second light output path and the second incident light beam to the first light output path.